

1. Simplify: $(9x^2 - 5)^2$

$$(9x^2 - 5)(9x^2 - 5)$$

$$81x^4 - 45x^2 - 45x^2 + 25$$

$$81x^4 - 90x^2 + 25$$

2. Solve the following system:

$$\begin{array}{r} -3x + 4y = -50 \\ + 3x - 7y = 65 \\ \hline -3y = 15 \\ \frac{-3y}{-3} = \frac{15}{-3} \\ y = -5 \end{array}$$

$$\begin{array}{l} 3x - 7(-5) = 65 \\ 3x + 35 = 65 \\ 3x = 30 \\ x = 10 \end{array}$$

$$(10, -5)$$

3. Which is a binomial factor of $(6x^2 + 3x - 14x - 7)$

- a. $(6x - 1)$ b. $(2x - 7)$ c. $(3x + 1)$ d. $(3x - 7)$

$$3x(2x+1) - 7(2x+1)$$

$$(3x-7)(2x+1)$$

Factoring Trinomials

$$ax^2 + bx + c$$

Factoring Trinomials with a GCF

Step 1: Factor out the GCF

***List out the A, B & C values**

Step 2: Multiply A and C

Step 3: List Factor Pairs of AC

Step 4: Find the factor pair that has a sum of B.

Step 5: Re-write as four terms

Step 6: Factor by grouping

*From the half sheet

$$2b^2 + 10b + 12$$

$$2(b^2 + 5b + 6)$$

$$\begin{aligned} a &= 1 \\ b &= 5 \\ c &= 6 \end{aligned}$$

$$ac = 6$$

3	2
1	6

$$2(b^2 + 5b + 6)$$

$$(b^2 + 3b)(2b + 6)$$

$$\textcircled{b}(b+3) \textcircled{2}(b+3)$$

$$2(b+2)(b+3)$$

Complete these on the back of the half sheet

Example 1: $a^2 + 8a + 15$

$$a=1$$

$$b=8$$

$$c=15$$

$$ac=15$$
$$\begin{array}{r} 5 \\ \overline{)15} \\ 15 \\ \hline 0 \end{array}$$

$$(a^2 + 5a) + (3a + 15)$$

$$\textcircled{a}(a+5)\textcircled{3}(a+5)$$

$$\boxed{(a+3)(a+5)}$$

$$a^2 + 5a + 3a + 15$$

$$a^2 + 8a + 15$$

Example 2: $2x^2 + 13x + 6$

$$a=2$$

$$b=13$$

$$c=6$$

$$ac=12$$
$$\begin{array}{r} 12 \\ \overline{)12} \\ 12 \\ \hline 0 \end{array}$$

$$(2x^2 + 12x) + (x + 6)$$

$$\textcircled{2x}(x+6)\textcircled{1}(x+6)$$

$$\boxed{(2x+1)(x+6)}$$

Example 3: $3a^2 + 8a + 4$

① GCF? NO

② $a=3$
 $b=8$
 $c=4$

③ $ac = \frac{12}{6|2}$

$$\begin{array}{c} \swarrow \quad \searrow \\ (3a^2 + 6a) + (2a + 4) \\ \textcircled{3a}(a+2) \quad \textcircled{2}(a+2) \\ \boxed{(3a+2)(a+2)} \end{array}$$

FACTORING TRINOMIAL WS

1. $x^2 + 7x + 12$ $ac = 12$
 $\frac{3}{4}$

$a=1$
 $b=7$
 $c=12$

$(x^2 + 3x)(4x + 12)$

$x(x+3) \cdot 4(x+3)$

$(x+4)(x+3)$

2. $n^2 + 9n + 20$ $ac = 20$

$a=1$
 $b=9$
 $c=20$

$(n^2 + 4n)(5n + 20)$

$n(n+4) \cdot 5(n+4)$

$(n+5)(n+4)$

1	20
2	10
4	5

$$h^2 + 9h + 18$$

$$. a^2 + 10a + 24$$

33 $3y^2 - 15y + 12$
 $3(y^2 - 5y + 4)$
 $(y^2 - y)(4y + 4)$
 $(y)(y-1)(-4)(y-1)$
 $3(y-4)(y-1)$

$a=1$
 $b=-5$
 $c=4$

$ac=4$

2	2
-2	-2
1	4
-1	-4